FAB

Indiana Water Quality Standards

STATE OF INDIANA

STREAM POLLUTION CONTROL BOARD

INDIANAPOLIS 46206

1330 West Michigan Street
633-5467

September 11, 1973

Mr. Francis T. Mayo
Regional Administrator
U. S. Environmental Protection Agency
Region V
1 North Wacker Drive
Chicago, Illinois 60606

Dear Mr. Mayo:

Re: Revised and Promulgated Water Quality Standards SPC 1R-3, SPC 7R-2, SPC 10R State of Indiana

As requested by Mr. Chris Potos of your office, attached are the subject regulations as promulgated, including proof of approval by the Stream Pollution Control Board, the Environmental Management Board, the Attorney General and the Governor and proof of filing by the Secretary of State on August 21, 1973. These revised regulations, along with existing regulations SPC 4R and SPC 12, constitute the State of Indiana's official water quality standards.

Very truly yours,

Oral H. Hert

Oral H. Hert
Technical Secretary

LRCarter/dsc
Attachment
cc: Mr. Chris P. Potos
Mr. Ralph C. Pickard

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION V
1 NORTH WACKER DRIVE
CHICAGO, ILLINOIS 60606

August 9, 1973

Honorable Otis R. Bowen, M.D.
Governor of Indiana
Indianapolis, Indiana 46204

Dear Governor Bowen:

It is my pleasure to inform you that I am now approving the water quality standards of the State of Indiana in their entirety. These standards consist of Regulations SPC 1R-3, SPC 7R-2, SPC 10-R, and SPC 4-R, and as approved are those applicable under the Federal Water Pollution Control Act Amendments of 1972 (P.L. 92-500). I want to take this opportunity to congratulate the State on the adoption of generally excellent regulations that will protect the waters of Indiana.

In reviewing the new standards, I am pleased to note that only a very small stretch of Indiana's total water mass, that is the Grand Calumet River and the Indiana Harbor Canal, will not be protected for recreational uses and desirable or indigenous aquatic biota. The newly adopted standards applicable to the Grand Calumet River and the Indiana Harbor Canal, appear to be reasonable, based upon the magnitude of the industrial and municipal discharges and the miniscule, natural, design flow of the pertinent waters. In any event, the only excepted criterion is that for dissolved oxygen. According to your States' submission letter, we are advised that if the load allocation study currently in progress indicates that higher dissolved oxygen levels can be met in the excepted waters, Indiana would revise accordingly. We heartily concur with this direction.

At the present time, we have only one concern with the approved standards. The anti-degradation statement is not applied to Wolf Lake. The Indiana Stream Pollution Control Board feels that non-degradation in Wolf Lake is impossible - in spite of a Board policy that will disapprove of any new outfall, or disapprove of any increase in the pollutional strength of any existing discharge - because of the non-point source contribution to Wolf Lake, especially from winter highway maintenance and combined sewer overflows. Based upon the Board's policy, we will acknowledge this justification for the present time. However, during the next revision process this deficiency must be corrected. My staff will be most happy to work with the Board to develop an appropriate anti-degradation statement that will protect the valuable waters of Wolf Lake.

Due to the inexorable march of progress, it is evident that waste treatment and water pollution control technology will advance, knowledge and comprehension of water quality requirements for specific uses will improve, and the collection of water quality data will make more information available to assure more accurate assignment of water quality criteria. As this new knowledge becomes available, we will further expect to cooperate with the State of Indiana in making necessary amendments to the standards that have heretofore been approved. It will be our pleasure to continue to work together to protect, upgrade, and enhance the quality of the waters of your State.

Sincerely yours,

(Original Signed By
Francis T. Mayo)

Francis T. Mayo
Regional Administrator

REGULATION SPC 1R-3

WATER QUALITY STANDARDS FOR WATERS OF INDIANA

EFFECTIVE

INDIANA STREAM POLLUTION CONTROL BOARD

STATE OF INDIANA
STREAM POLLUTION CONTROL BOARD REGULATION

SPC 1R-3

Subsequent to due publication of notice and public hearings having been held on May 8, 1973, and May 17, 1973, as required by the provisions of IC 1971, 4-22-2, as originally enacted in the Acts of 1945, Chapter 120, the Indiana Stream Pollution Control Board, at its regular meeting held at the Indiana State Board of Health Building, 1330 West Michigan Street, Indianapolis, Indiana, on July 17, 1973, at which meeting a quorum was present, unanimously adopted the following new rule SPC 1R-3 which amends in its entirety SPC 1R-2 heretofore adopted on September 18, 1970, and further resolved that upon promulgation of SPC 1R-3, Regulation SPC 9 is repealed.

A REGULATION establishing water quality standards for all waters of the State of Indiana except those waters specifically named in any other valid rule or regulation of the Stream Pollution Control Board pursuant to the authority granted in IC 1971, 13-1-3 and IC 1971, 13-7, amending in its entirety SPC 1R-2 promulgated on September 18, 1970, and repealing SPC 9 promulgated on June 13, 1967.

Section 1. (Nondegradation of Existing High Quality Waters) All waters whose existing quality is better than the following criteria as of the date on which this regulation becomes effective will be maintained in their present high quality. Such waters will not be lowered in quality unless and until it has been affirmatively demonstrated to the Stream Pollution Control Board that such change is justifiable as a result of necessary economic or social development and will not become injurious to any assigned uses made of, or presently possible, in such waters.

Sec. 2. (Waters Designations) This Regulation shall apply to all waters of the State except Lake Michigan, Wolf Lake, the Grand Calumet River, the Indiana Harbor Ship Canal and privately-owned ponds.

Sec. 3. (Water Use Designations)

(a) The following uses have been established by the Stream Pollution Control Board for all waters of the State except as provided in Section 2 above:

(1) All lakes and reservoirs, the St. Joseph River in Elkhart and St. Joseph Counties, the St. Joseph River in Allen County, the Wabash River where forming the common boundary with Illinois, the lower reaches of the Indiana portion of the Whitewater River and the Ohio River will be maintained for whole body contact recreation. All other streams will be maintained for partial body contact recreation.

(2) All waters will be capable of supporting a well-balanced, warm water fish population; except that, all waters, where the natural temperatures will permit, will be capable of supporting put-and-take trout fishing; and where now possible, the natural reproduction of trout and salmon.

(3) All waters which are used for public or industrial water supply must meet the criteria for these uses at the points where the water is withdrawn.

(4) All waters which are used for agricultural purposes must meet the criteria established in subsection 6(a).

(b) Where multiple uses have been designated for a body of water, the most protective of all simultaneously applicable criteria will apply.

Sec. 4. (Mixing Zones)

(a) All water quality criteria in this Regulation, except those provided

in subsection 6(a) below, are to be applied at a point outside of the mixing zone to allow for a reasonable admixture of waste effluents with the receiving waters.

(b) Due to varying physical, chemical and biological conditions, no absolute mixing zone may be prescribed. Where possible (subsection 4(c)) the general guideline is to be that the mixing zone should be limited to no more than 1/4 (25%) of the cross-sectional area and/or volume of flow of the stream, leaving at least 3/4 (75%) free as a zone of passage for aquatic biota nor should it extend over 1/2 (50%) of the width of the stream.

(c) The applicability of the guideline (subsection 4(b)) will be on a case-by-case basis and the following factors must be considered:

(1) The dilution ratio,

(2) The physical, chemical, and biological characteristics of the receiving body of water,

(3) The physical, chemical, and biological characteristics of the waste effluent,

(4) The present and anticipated uses of the receiving body of water,

(5) The measured or anticipated effect of the discharge on the quality of the receiving body of water and

(6) The synergistic effects of overlapping mixing zones or the aggregate effects of adjacent mixing zones.

(d) In any event, the total area and/or volume of the receiving stream, lake or reservoir assigned to mixing zones will be limited to:

(1) A short stretch of the stream or small area of the lake or reservoir or

(2) That distance, area and/or volume necessary to reasonably meet the purposes of the mixing zone.

Sec. 5. All stream quality criteria in this Regulation, except those provided in subsection 6(a) below, will apply at all times when the stream flows are equal to or greater than the average minimum seven-consecutive-day low flow which occurs once in ten years.

Sec. 6. (Water Quality Criteria)

(a) All waters at all times and at all places, including the mixing zone, shall meet the minimum conditions of being free from substances, materials, floating debris, oil or scum attributable to municipal, industrial, agricultural or other discharges:

(1) That will settle to form putrescent or otherwise objectionable deposits,

(2) That are in amounts sufficient to be unsightly or deleterious,

(3) That produce color, odor or other conditions in such degree as to create a nuisance,

(4) Which are toxic or harmful to human, animal, plant or aquatic life and

(5) Which are in concentrations or combinations that will cause or contribute to the growth of aquatic plants or algae in such a degree as to create a nuisance, be unsightly or deleterious or be harmful to human, animal, plant or aquatic life or otherwise impair the designated uses.

(b) In addition to subsection 6(a) above and pursuant to subsection 3(a)(2), the following criteria are for the evaluation of conditions for the maintenance of a well-balanced fish population. They are applicable at any point in the waters outside of the mixing zone:

(1) (pH) No pH values below 6.0 nor above 8.5, except daily fluctuations which exceed pH 8.5 and are correlated with photosynthetic activity, may be tolerated. However, any sudden drop below pH 6.0 or sudden rise above pH 8.5, not related to photosynthesis, indicates abnormal conditions which should be investigated immediately.

(2) (Taste and Odor) There shall be no substances which impart unpalatable flavor to food fish or result in noticeable offensive odors in the vicinity of the water.

(3) (Toxic Substances) Concentrations of toxic substances shall not exceed one-tenth of the 96-hour median tolerance limit for important indigenous species, except that other more stringent application factors shall be used when justified on the basis of available evidence and approved by the appropriate agency.

(c) In addition to subsection 6(a) and 6(b) above and pursuant to 3(a)(2), the following criteria are for the evaluation of conditions for the maintenance of a well-balanced, warm water fish population. They are applicable at any point in the waters outside of the mixing zone:

(1) (Dissolved Oxygen) Concentrations of dissolved oxygen shall average at least 5.0 mg/l per calendar day and shall not be less than 4.0 mg/l at any time.

(2) (Temperature)

(aa) There shall be no abnormal temperature changes that may affect aquatic life unless caused by natural conditions.

(bb) The normal daily and seasonal temperature fluctuations that existed before the addition of heat due to other than natural causes shall be maintained.

(cc) The maximum temperature rise at any time or place above natural temperatures shall not exceed 5°F in streams and 3°F in lakes and reservoirs.

(dd) In addition, the water temperature of streams shall not exceed the maximum limits indicated in the following table:

	Ohio River Main Stem	St. Joseph River Tributary to Lake Michigan	Other Indiana Streams
January	50	50	50
February	50	50	50
March	60	55	60
April	70	65	70
May	80	75	80
June	87	85	90
July	89	85	90
August	89	85	90
September	87	85	90
October	78	70	78
November	70	60	70
December	57	50	57

(d) In addition to subsection 6(a) and 6(b) above and pursuant to 3(a)(2), the following criteria are for the evaluation of conditions for the maintenance of a well-balanced, cold water fish population. They are applicable at any point in the waters outside of the mixing zone:

(1) (Dissolved Oxygen)

(aa) In those waters designated for put-and-take trout fishing, dissolved oxygen concentrations shall not be less than 6.0 mg/l at any time or place.

(bb) Spawning areas (during the spawning season) shall be protected by a minimum dissolved oxygen concentration of 7.0 mg/l.

(2) (Temperature)

(aa) In lakes and streams, where the natural reproduction of trout and salmon is to be protected, no heat shall be added.

(bb) In put-and-take streams, temperatures shall not exceed 65°F or a 5°F rise above natural, whichever is less.

(cc) In lakes where a put-and-take trout fishery is to be protected, no heat shall be added.

(e) In addition to subsection 6(a) above and pursuant to subsection 3(a)(1), the criterion for the evaluation of conditions for maintaining whole body contact recreation at any point in the waters outside of the mixing zone is that the fecal coliform bacteria content (either MPN or MF count) shall not exceed 200 per 100 ml as a geometric mean based on not less than five samples; nor exceed 400 per 100 ml in

more than one sample during the month. The months of April through October, inclusive, are designated as the recreational season.

(f) In addition to subsection 6(a) above and pursuant to subsection 3(a)(1), the criterion for the evaluation of conditions for maintaining partial body contact recreation at any point in the waters outside of the mixing zone is that the fecal coliform bacteria content (either MPN or MF count) shall not exceed 1,000 per 100 ml as a geometric mean based on not less than five samples; nor exceed 2,000 per 100 ml in more than one sample.

(g) In addition to subsection 6(a) above and pursuant to subsection 3(a)(3), the following criteria are for the evaluation of the water quality at the point at which water is withdrawn for treatment and distribution as a potable supply:

(1) (Bacteria) The coliform bacteria group shall not exceed 5,000 per 100 ml as a monthly average value (either MPN or MF count); nor exceed this number in more than 20 percent of the samples examined during any month; nor exceed 20,000 per 100 ml in more than five percent of such samples.

(2) (Threshold-odor number) Taste and odor producing substances, other than naturally occurring, shall not interfere with the production of a finished water by conventional treatment consisting of coagulation, sedimentation, filtration and chlorination. The threshold odor number of the finished water must be three or less.

(3) (Dissolved Solids) Other than from naturally occurring sources, dissolved solids shall not exceed 500 mg/l as a monthly average value, nor exceed 750 mg/l at any time. Values of specific conductance of 800 and 1,200 micromhos/cm (at 25°C.) may be considered equivalent to dissolved solids concentrations of 500 and 750 mg/l.

(4) (Radioactive substances) Water supplies shall be approved without further consideration of other sources of radioactivity intake of Radium-226 and Strontium-90 when the water contains these substances in amounts not exceeding 3 and 10 picocuries per liter, respectively. In the known absence of Strontium-90 and alpha emitters, the water supply is acceptable when the gross beta concentrations do not exceed 1,000 picocuries per liter.

(5) (Chemical Constituents) The chemical constituents in the waters shall not be present in such levels as to prevent meeting the Drinking Water Standards adopted by the Indiana State Board of Health after conventional water treatment.

(h) In addition to subsection 6(a) and pursuant to subsection 3(a)(3), the criterion for the evaluation of water quality at the point at which water is withdrawn for use (either with or without treatment) for industrial cooling and processing is that, other than from naturally occurring sources, the dissolved solids shall not exceed 750 mg/l as a monthly average, nor exceed 1,000 mg/l at any time. Values of

specific conductance of 1,200 and 1,600 micromnos/cm (at 25°C.) may be considered equivalent to dissolved solids concentrations of 750 and 1,000 mg/l.

(i) Pursuant to subsection 3(a)(4), the criteria for evaluation of conditions for agricultural use are the same as those in subsection 6(a).

Sec. 7. (Wastewater Treatment Requirements)

(a) All municipal and semi-public wastewaters shall be subject to the following wastewater treatment requirements prior to the discharge to the waters of the State:

(1) (Secondary Treatment) All sewage and other wastewater containing comparable amounts of organic material shall receive a minimum of secondary treatment.

(2) (Advanced Treatment) Treatment in excess of that which can be provided by secondary wastewater treatment facilities shall be required when the seven-consecutive-day low flow occurring once in ten years in the receiving stream is less than three times the flow of wastewater being discharged thereto or when otherwise necessary to insure that established water quality criteria are met.

(3) (Phosphorus Removal)

(aa) Phosphorus removal or control facilities shall be required at all municipalities and semi-public facilities with a daily discharge of elemental phosphorus (P) of ten (10) pounds or greater when:

(i) They are located within the Lake Michigan or Lake Erie Basins, or

(ii) They discharge directly to a lake or reservoir or to a tributary at a point within 40 miles upstream from a lake or reservoir.

(bb) Phosphorus removal or control facilities shall be required at any municipality or semi-public facility, regardless of the quantitative elemental phosphorus content in its daily discharge, when it is determined that phosphorus reduction is required to protect downstream water uses or necessary to insure that established water quality criteria are met.

(cc) Where required, phosphorus removal facilities shall be designed to achieve an 80 percent reduction in the elemental phosphorus (P) content of the wastewater or produce an effluent containing no more than 1.0 mg/l of elemental phosphorus (P), whichever is more stringent.

(4) (Effluent Disinfection) All sewage treatment plant effluents and other wastewaters which may cause or contribute to the bacterial contamination of the receiving waters shall be adequately disinfected prior to discharge to waters of the State. Disinfection shall be on a continuous basis and shall be to such extent that the coliform bacteria criteria for the designated recreational and/or public water supply use are met in the receiving water outside of the mixing zone.

(b) All industrial and any other point source wastewater discharges, other than those specified in subsection 7(a) above, shall be subject to the following wastewater treatment requirements prior to discharge to waters of the State:

(1) All said wastewaters which contain organic material and/or suspended solids shall receive treatment which will produce an effluent of equal quality to that required to be produced by municipal and semi-public sewage treatment plants in the same stream reach.

(2) All said wastewaters which contain contaminants of any kind other than those specified in subsection 7(b)(1) shall provide the best practicable degree of wastewater treatment or control consistent with technological feasibility, economic reasonableness and sound engineering judgement.

(3) (Phosphorus Removal)

(aa) Phosphorus removal or control facilities shall be required for all said wastewaters with a daily discharge of elemental phosphorus (P) of ten (10) pounds or greater when:

(i) They are located within the Lake Michigan or Lake Erie Basins, or

(ii) They discharge directly to a lake or reservoir or to a tributary at a point within 40 miles upstream from a lake or reservoir.

(bb) Phosphorus removal or control facilities shall be required at any industry or any other point source discharge, regardless of the quantitative elemental phosphorus content in its daily discharge, when it is determined that phosphorus reduction is required to protect downstream water uses or necessary to insure that established water quality criteria are met.

(cc) Where required, phosphorus removal facilities shall be designed to achieve an 80 percent reduction in the elemental phosphorus (P) content of the wastewater or produce an effluent containing no more than 1.0 mg/l of elemental phosphorus (P), whichever is more stringent.

Sec. 8. The analytical procedures uses as methods of analyses to determine the chemical, bacteriological, biological, and radiological quality of waters sampled shall be in accordance with the latest edition of Standards Methods for the Examination of Water and Wastewater or other methods approved by the Indiana Stream Pollution Control Board and the Environmental Protection Agency, Water Quality Office.

Sec. 9. Unless otherwise specified, the term average as used herein means an arithemetical average.

Sec. 10. If any section, paragraph, sentence, clause, phrase, or word of this regulation, or any other part thereof, be declared unconstitutional or invalid for any reason, the remainder of said regulation shall not be affected thereby and shall remain in full force and effect.

Sec. 11. This regulation shall, upon promulgation, repeal Regulation SPC 9 which covered the Little Calumet River flowing into Illinois promulgated June 13, 1967.

REGULATION SPC 7R-2

WATER QUALITY STANDARDS FOR THE GRAND CALUMET RIVER AND THE INDIANA HARBOR SHIP CANAL

EFFECTIVE

INDIANA STREAM POLLUTION CONTROL BOARD

STATE OF INDIANA
STREAM POLLUTION CONTROL BOARD REGULATION

SPC 7R-2

Subsequent to due publication of notice and public hearing having been held on May 17, 1973, as required by the provisions of IC 1971, 4-22-2, as originally enacted in the Acts of 1945, Chapter 120, the Indiana Stream Pollution Control Board, at its regular meeting held at the Indiana State Board of Health Building, 1330 West Michigan Street, Indianapolis, Indiana, on July 17, 1973, at which meeting a quorum was present, unanimously adopted the following new rule SPC 7R-2 which amends in its entirety SPC 7R heretofore adopted on February 11, 1972.

A REGULATION establishing the water quality standards for the Grand Calumet River and the Indiana Harbor Ship Canal pursuant to the authority granted in IC 1971, 13-1-3 and IC 1971, 13-7 and amending in its entirety SPC 7R promulgated on February 11, 1972.

Section 1. The Indiana Stream Pollution Control Board recognizes that a major function of the Grand Calumet River and the Indiana Harbor Ship Canal is the conveyance of treated wastewater and storm water overflow and that essentially the entire flow in these streams is made up of such waters. The Board further recognizes that even if all wastewaters discharged to these streams are provided the highest degree of treatment possible, criteria for maintaining a well-balanced, warm water fish population may not be met at all times. Therefore, the Board classifies these waters for partial body contact, industrial water supply and limited aquatic life.

Sec. 2. (Water Quality Criteria)

(a) All waters at all times and at all places, including the mixing zone, shall meet the minimum conditions of being free from substances, materials, floating debris, oil or scum attributable to municipal, industrial, agricultural or other discharges:

(1) That will settle to form putrescent or otherwise objectionable deposits,

(2) That are in amounts sufficient to be unsightly or deleterious,

(3) That produce color, odor or other conditions in such degree as to create a nuisance,

(4) Which are toxic or harmful to human, animal, plant or aquatic life and

(5) Which are in concentrations or combinations that will cause or contribute to the growth of aquatic plants or algae in such degree as to create a nuisance, be unsightly or deleterious or be harmful to human, animal, plant or aquatic life or otherwise impair the designated uses.

(b) In addition to subsection 2(a) above, the following criteria are for evaluation of waters of the Grand Calumet River and the Indiana Harbor Ship Canal. They are applicable at any point in the stream except for areas immediately adjacent to outfalls. In such areas cognizance will be given to the opportunities for the admixture of waste effluents with the receiving water:

(1) (Dissolved Oxygen) Concentrations of dissolved oxygen shall average at least 3.0 mg/l during any 24-hour period and shall not be less than 2.0 mg/l at any time.

(2) (pH) No pH values below 6.5 or above 8.5, except daily fluctuations which exceed 8.5 and are related to photosynthetic activity, may be tolerated.

(3) (Temperature) The water temperature shall not exceed 90 degrees Fahrenheit during the summer or 60 degrees Fahrenheit during the period from October through and including March.

(4) (Fecal Coliform Bacteria) The fecal coliform bacteria content (either MPN or MF count) shall not exceed a geometric mean of 1,000 per 100 ml, nor exceed 2,000 per 100 ml in more than ten percent of the samples, except during periods of storm water runoff.

(5) (Filterable Residue (total dissolved solids)) The filterable residue content shall not average more than 275 mg/l during any 24-hour period nor exceed this value at any time, except in waters flowing westward into Illinois, the concentrations shall not exceed 500 mg/l.

(6) (Chemical Constituents) The following levels of chemical constituents shall not be exceeded at any time:

Constituent	Concentration (mg/l)
Ammonia Nitrogen	1.5
*Chloride	35.0
Cyanide	0.1
Fluoride	1.3
Iron (dissolved)	0.3
Mercury (total)	0.005
Phenol-like substances	0.010
Sulfates	75.0

* In waters flowing westward into Illinois, the concentration shall not exceed 125 mg/l.

(7) (Toxic Substances) Concentrations of toxic substances shall not exceed one-tenth of the 96-hour median tolerance limit for important indigenous species, except that other more stringent application factors shall be used when justified on the basis of available evidence and approved by the appropriate regulatory agencies.

(8) (Total Phosphorus) The content of total phosphorus shall not exceed 0.10 mg/l at any time except in waters flowing westward into Illinois.

(9) (Biochemical Oxygen Demand) The biochemical oxygen demand shall not exceed 10.0 mg/l.

(10) (Oil) Oil or similar materials shall not be present in such quantities that they will produce a visible film on the water surface, coat the banks and bottom of the stream or in any way be toxic or harmful to fish or other aquatic life. In addition, the total oil concentration, determined by the petroleum ether extraction method, shall not exceed 5.0 mg/l.

(11) (Miscellaneous Trace Contaminants and Radionuclides) Miscellaneous trace contaminants and radionuclides shall not be present in concentrations that will prevent meeting Public Health Service 1962 Drinking Water Standards after conventional treatment.

Sec. 3. Unless otherwise specified, the term average as used herein means an arithmetical average.

Sec. 4. The analytical procedures used as methods of analyses to determine the chemical, bacteriological, biological, and radiological quality of waters sampled shall be in accordance with the latest edition of Standard Methods for the Examination of Water and Wastewater or other methods approved by the Indiana Stream Pollution Control Board and the Federal Environmental Protection Agency.

Sec. 5. If any section, paragraph, sentence, clause, phrase, or word of this regulation, or any other part thereof, be declared unconstitutional or invalid for any reason, the remainder of said regulation shall not be affected thereby and shall remain in full force and effect.

REGULATION SPC 10R

WATER QUALITY STANDARDS FOR WOLF LAKE

EFFECTIVE

INDIANA STREAM POLLUTION CONTROL BOARD

STATE OF INDIANA
STREAM POLLUTION CONTROL BOARD REGULATION

SPC 10R

Subsequent to due publication of notice of public hearing having been held on May 17, 1973, as required by the provisions of IC 1971, 4-22-2, as originally enacted in the Acts of 1945, Chapter 120, the Indiana Stream Pollution Control Board at its regular meeting held at the Indiana State Board of Health Building, 1330 West Michigan Street, Indianapolis, Indiana, on July 17, 1973, at which meeting a quorum was present, unanimously adopted the following new rule SPC 10R which amends in its entirety SPC 10 heretofore adopted on June 13, 1967.

A REGULATION establishing the water quality standards for Wolf Lake and the Wolf Lake Channel pursuant to the authority granted in IC 1971, 13-1-3 and IC 1971, 13-7 and amending in its entirety SPC 10 promulgated on June 13, 1967.

Section 1. (Water Use Designations)

(a) The following uses have been established by the Indiana Stream Pollution Control Board for the waters of Wolf Lake Proper and Wolf Lake Channel:

(1) All waters of Wolf Lake Proper will be maintained for whole body contact recreation.

(2) All waters of Wolf Lake Channel will be maintained for partial body contact recreation.

(3) All waters of both Wolf Lake Proper and Wolf Lake Channel will be capable of supporting a well-balanced, warm water fish population.

Sec. 2. (Water Quality Criteria)

(a) All waters at all times and at all places, including the mixing zone, shall meet the minimum conditions of being free from substances, materials, floating debris, oil or scum attributable to municipal, industrial, agricultural or other discharges:

(1) That will settle to form putrescent or otherwise objectionable deposits,

(2) That are in amounts sufficient to be unsightly or deleterious,

(3) That produce color, odor or other conditions in such degree as to create a nuisance,

(4) Which are toxic or harmful to human, animal, plant or aquatic life and

(5) Which are in concentrations or combinations that will cause or contribute to the growth of aquatic plants or algae in such degree as to create a nuisance, be unsightly or deleterious or be harmful to human, animal, plant or aquatic life or otherwise impair the designated uses.

(b) In addition to subsection 2(a) above, the following criteria are for evaluation of waters of Wolf Lake and Wolf Lake Channel. They are applicable at any point in these waters except for areas immediately adjacent to outfalls. In such areas, cognizance will be given to the opportunities for the admixture of waste effluents with the receiving water:

(1) (Fecal Coliform Bacteria)

(aa) The fecal coliform content (either MPN or MF count) in Wolf Lake Proper shall not exceed 200 per 100 ml as a geometric mean based on not less than five samples; nor exceed 400 per 100 ml in more than ten percent of the samples.

(bb) The fecal coliform content (either MPN or MF count) at all locations in Wolf Lake Channel shall not exceed a geometric mean of 1,000 per 100 ml, nor exceed 2,000 per 100 ml in more than ten percent of the samples.

(2) (Dissolved Oxygen) Concentrations of dissolved oxygen shall average at least 5.0 mg/l per calendar day and shall not be less than 4.0 mg/l at any time, except that lower values associated with depth may be tolerated where caused by natural conditions.

(3) (pH) No pH values below 6.5 nor above 8.5, except daily fluctuations which exceed pH 8.5 and are correlated with photosynthetic activity, may be tolerated

(4) (Toxic Substances) Concentrations of toxic substances shall not exceed one-tenth of the 96-hour median tolerance limit for important indigenous species, except that other more stringent application factors shall be used when justified on the basis of available evidence and approved by the appropriate regulatory agencies.

(5) (Oil) Oil or similar materials shall not be present in such quantities that they will produce a visible film on the water surface, coat the banks and bottom of the Lake or in any way be toxic or harmful to fish or other aquatic life.

(6) (Ammonia Nitrogen (N)) Any single daily value of ammonia nitrogen shall not be more than 0.12 mg/l.

(7) (Cyanides (CN)) Any single daily value of cyanide shall not be more than 0.025 mg/l.

(8) (Total Phosphorus (P)) Any single daily value of total phosphorus shall not be more than 0.04 mg/1.

(9) (True Color) Any single daily value of true color shall not be more than 15 units.

(10) (Odor) No obnoxious odor of other than natural origin shall be present.

(11) (Turbidity) No activity causing turbidity, of other than natural origin, that will cause substantial visible contrast with the natural appearance of the water shall be permitted.

(c) In addition to subsections 2(a) and 2(b) above, the following temperature criteria are for the evaluation of waters of Wolf Lake and Wolf Lake Channel. All temperatures are expressed in degrees Fahrenheit. The point of measurement shall normally be in the surface one meter at such depth as to avoid thin layer surface warming due to extreme ambient air temperatures; but where required to determine the true distribution of heated wastes and natural variations in water temperature, measurements shall be made at greater depths and at several depths so as to form a thermal profile. Surface water drains and combined sewer overflows are exempted from the following:

(1) There shall be no abnormal temperature changes in the waters of Wolf Lake so as to be injurious to fish, wildlife, or other aquatic life or the growth or propagation thereof.

(2) The normal daily and seasonal temperature fluctuations for waters of Wolf Lake that existed before the addition of heat shall be maintained.

(3) The temperature of the waters of Wolf Lake shall not exceed 85 degrees Fahrenheit during the summer or 60 degrees Fahrenheit during the period from October through and including March.

(4) At any time and at any place in Wolf Lake Channel after mixing, the receiving water shall not be more than five degrees Fahrenheit above the existing natural water temperature of the Lake. In addition the temperature of Wolf Lake Channel at its mouth shall not be more than three degrees Fahrenheit above the natural temperature of the Lake.

Sec. 3. Unless otherwise specified, the term average as used herein means an arithmetical average.

Sec. 4. The analytical procedures used as methods of analyses to determine the chemical, bacteriological, biological, and radiological quality of waters sampled shall be in accordance with the latest edition of Standard Methods for the Examination of Water and Wastewater or other methods approved by the Indiana Stream Pollution Control Board and the Federal Environmental Protection Agency.

Sec. 5. If any section, paragraph, sentence, clause, phrase, or word of this regulation, or any other part thereof, be declared unconstitutional or invalid for any reason, the remainder of said regulation shall not be affected thereby and shall remain in full force and effect.

OFFICIAL NEW RULE SPC 4-R

ADOPTED AND PROMULGATED

BY THE

STREAM POLLUTION CONTROL BOARD

OF THE STATE OF INDIANA

Issued by
Stream Pollution Control Board
State of Indiana

REGULATION SPC 4-R

LAKE MICHIGAN AND CONTIGUOUS HARBOR AREAS

Waters whose existing quality is better than the following criteria as of the date on which this regulation becomes effective will be maintained in their present high quality consistent with the powers granted under the Indiana Stream Pollution Control Law. Such waters will not be lowered in quality unless and until it has been affirmatively demonstrated to the Stream Pollution Control Board that such change is justifiable as a result of necessary economic or social development and will not become injurious to any assigned uses made of, or presently possible, in such waters. In order to preserve, protect, and enhance existing high quality waters, all waste discharges will receive a minimum treatment level equivalent to secondary or higher as conditions necessitate.

MINIMUM CONDITIONS APPLICABLE TO WATERS OF LAKE MICHIGAN AND HARBOR AREAS

1. Free from substances attributable to municipal, industrial, agricultural or other discharges that will settle to form putrescent or otherwise objectionable deposits.

2. Free from floating debris, oil, scum, and other floating materials attributable to municipal, industrial, agricultural or other discharges in amounts sufficient to be unsightly or deleterious.

3. Free from materials attributable to municipal, industrial, agricultural or other discharges producing color, odor or other conditions in such degree as to create a nuisance.

4. Free from substances attributable to municipal, industrial, agricultural or other discharges in concentrations or combinations which are toxic or harmful to human, animal, plant or aquatic life.

5. Free from substances attributable to municipal, industrial, agricultural or other discharges in concentrations or combinations which will cause or contribute to the growth of aquatic plants or algae in such degree as to create a nuisance, be unsightly or deleterious or be harmful to human, animal, plant or aquatic life or otherwise impair the designated uses.

The following criteria are for evaluation of waters of Lake Michigan and contiguous harbor areas. They are applicable at any point in these waters except for areas immediately adjacent to outfalls. In such areas cognizance will be given to the opportunities for the admixture of waste effluents with the receiving water.

1. Fecal Coliform Bacteria: (MPN or MF Count/100 ml)

   a. Whole-Body Contact: The fecal coliform content at all recognized beach areas shall not exceed 200 per 100 ml as a monthly geometric mean based on not less than five samples per month; nor exceed 400 per 100 ml in more than ten percent of all samples taken during a month.

   b. Partial-Body Contact: The fecal coliform content at all locations in harbor areas other than at recognized beach areas shall not exceed a geometric mean of 1,000 per 100 ml, nor exceed 2,000 per 100 ml in more than ten percent of the samples.

   c. Lake Michigan Open Water: The fecal coliform content in the open water of Lake Michigan shall not exceed a geometric mean of 20 per 100 ml.

2. Toxic Substances: Not to exceed one-tenth of the 96-hour median tolerance limit obtained from continuous flow bioassays where the dilution water and toxicant are continuously renewed, except that other, lower application factors may be used in specific cases when justified on the basis of available evidence or in the case of materials that are persistent, synergistic or that have cumulative effects.*

3. Radioactivity (pc/l): The gross beta concentration shall not exceed 100 picocuries per liter. In addition, the concentrations of Radium-226 and Strontium-90 shall not exceed 1 and 2 picocuries per liter respectively.

4. Temperature: Municipal water and wastewater treatment plants and vessels are exempted from the following:

   a. All temperatures are expressed in degrees Fahrenheit. In all receiving waters the points of measurement shall normally be in the surface one meter at such depth as to avoid thin layer surface warming due to extreme ambient air temperatures, but where required to determine the true distribution of heated wastes, and natural variations in water temperature, measurements shall be made at greater depths and at several depths as a thermal profile.

   b. There shall be no abnormal temperature changes so as to be injurious to fish, wildlife, or other aquatic life or the growth or propagation thereof. In addition, plume interaction with the bottom should be minimized and shall not injuriously affect fish spawning or nursery areas.

   c. The normal daily and seasonal temperature fluctuations that existed before the addition of heat shall be maintained.

   d. At any time and at a maximum distance of 1000 feet from a fixed point adjacent to the discharge and or as agreed upon by the State and Federal regulatory agencies, the receiving water temperature shall not be more than 3 degrees Fahrenheit above the existing natural water temperature nor shall the maximum temperature exceed those listed below whichever is lower.

* Numerical guidelines based on available data will be provided to dischargers.

January	45
February	45
March	45
April	55
May	60
June	70
July	80
August	80
September	80
October	65
November	60
December	50

e. All new waste heat discharges or enlargement of existing facilities exceeding a daily average of 0.5 billion BTU/hour, which had not begun operation as of the effective date of this regulation, and which plan to use Lake Michigan waters for cooling shall be limited to that amount essential for blowdown in the operation of a closed cycle cooling facility. Plants not in operation as of the effective date of this regulation, will be allowed to go into operation provided they are committed to a closed cycle cooling system construction schedule approved by the State and Federal regulatory agencies.

f. Water intakes shall be designed and located to minimize entrainment and damage to desirable organisms. Requirements may vary depending upon local conditions but, in general, intakes are to have minimum water velocity and shall not be located in spawning or nursery areas of important fishes. Water velocity at screens and other exclusion devices shall also be at a minimum.

g. Discharges other than those now in existence shall be such that the thermal plumes do not overlap or intersect.

h. Facilities discharging more than a daily average of 0.5 billion BTU/hour of waste heat shall continuously record intake and discharge temperature and flow and make those records available to regulatory agencies upon request.

5. Oil: Oil or similar materials shall not be present in such quantities that they will produce a visible film on the water surface, coat the banks and bottom of the lake or harbors or in any way be toxic or harmful to fish or other aquatic life.

In the following table the criteria for the Inner Harbor Basin are for evaluation of the waters between the shore and a line from the existing Calumet Harbor breakwater to the existing light on the Inland Steel breakwater. The criteria for Gary Harbor and Burns Harbor are for the evaluation of waters enclosed by the Gary Harbor and Burns Harbor breakwaters. The criteria for Lake Michigan are for evaluation of all shore and open waters outside of the specified harbor areas.

Parameter	Criteria		
	Inner Harbor	Gary Harbor and Burns Harbor	Lake Michigan
Dissolved Oxygen (percent sat.)			
24-hour ave.	80%	85%	90%
Min. value	70%	75%	80%
pH (range)	7.5-8.5	7.5-8.5	7.5-8.5
Turbidity	No turbidity of other than natural origin that will cause a substantial visible contrast with the natural appearance of the water.	Same	Same
True Color (units)			
Monthly ave.	5	5	5
Single value	15	15	15
Threshold Odor (units) Hydrocarbon and/or chemical			
Daily ave.	6	5	4
Single value	15	10	8
Odor	No obnoxious odor of other than natural origin.	Same	Same
Ammonia Nitrogen (mg/l)			
Monthly ave.	0.05	0.03	0.02
Single value	0.12	0.10	0.05
Chlorides (mg/l)			
Monthly ave.	20	15	10
Single value	30	20	15
Cyanide (mg/l)	Not to exceed 0.025 at any time	Not to exceed 0.01 at any time.	Not to exceed 0.01 at any time.
Fluorides (mg/l)			
Monthly ave.	Not to exceed 1.0 at any time.	Not to exceed 1.0 at any time.	Not to exceed 1.0 at any time.
Dissolved Iron (mg/l)			
Monthly ave.	0.15	0.15	0.15
Single Value	0.30	0.30	0.30
Phenol-like Substances (mg/l)			
Monthly ave.	0.002	0.001	0.001
Single value	0.005	0.003	0.003

Parameter	Inner Harbor	Gary Harbor and Burns Harbor	Lake Michigan
Sulfates (mg/l)			
Monthly ave.	39	26	26
Single Value	75	50	50
Total Phosphorus (P) (mg/l)			
Monthly ave.	0.03	0.03	0.03
Single value	0.05	0.04	0.04
Filterable Residue (mg/l) (total dissolved solids)			
Monthly ave.	197	185	172
Single value	230	215	200
Arsenic (mg/l)	Not to exceed 0.05 at any time	Same	Same
Barium (mg/l)	Not to exceed 1.0 at any time	Same	Same
Cadmium (mg/l)	Not to exceed 0.01 at any time	Same	Same
Hexavalent Chrome (mg/l)	Not to exceed 0.05 at any time	Same	Same
Lead (mg/l)	Not to exceed 0.05 at any time	Same	Same
Selenium (mg/l)	Not to exceed 0.01 at any time	Same	Same
Silver (mg/l)	Not to exceed 0.05 at any time	Same	Same
Total Mercury (mg/l)	Not to exceed 0.005 at any time	Same	Same

Miscellaneous Trace Contaminants

Shall not be present in concentrations that will prevent meeting PHS 1962 Drinking Water Standards after conventional treatment.

NOTE 1: Unless otherwise specified, the term average as used herein means an arithmetical average.

NOTE 2: The analytical procedures used as methods of analyses to determine the chemical, bacteriological, biological and radiological quality of water sampled shall be in accordance with the latest edition of Standard Methods for the Examination of Water and Wastewater or other methods approved by the Indiana Stream Pollution Control Board and the Federal Environmental Protection Agency.

OFFICIAL NEW RULE SPC 12

ADOPTED AND PROMULGATED

BY THE

STREAM POLLUTION CONTROL BOARD

OF THE STATE OF INDIANA

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REGULATION SPC 12 - NATURAL SPAWNING AREAS, REARING OR IMPRINTING AREAS AND MIGRATION ROUTES OF SALMONID FISHES

A. Natural Spawning and Rearing or Imprinting Areas

The criteria listed below are for evaluation of the following waters designated by the Indiana Department of Natural Resources as natural spawning areas or rearing or imprinting areas for salmonid fishes:

Rearing or Imprinting Areas

Trail Creek from Black Road on the West Branch and Meer Road on the East Branch downstream to Highway 35.
Little Calumet River and tributaries joining it from the southern boundary of the Westville Prison Farm downstream to the Wagner Road Bridge near Chesterton.
Black Ditch from Beverly Drive downstream to Lake Michigan.
Salt Creek above its confluence with the Little Calumet River.

1. Dissolved Oxygen: Concentrations shall not be less than 6.0 mg/l at any time or any place. During the spawning season or during periods of rearing or imprinting, the dissolved oxygen shall not fall below 7.0 mg/l at any time or any place.

2. Temperature: No heat shall be added.

3. Taste and Odor: There shall be no substances which impart unpalatable flavor to fish or taint any of the associated biota; or result in an offensive or unnatural odor of the water or in the vicinity of the water.

4. pH: No values below 6.0 or above 8.5, except daily fluctuations which exceed pH 8.5 and are correlated with photosynthetic activity, may be tolerated. However, any drop below 6.0 or sudden rise above 8.5 not related to photosynthesis indicates abnormal conditions.

5. Oil: Oil or similar materials shall not be present in such quantities that they will produce a visible film on the water surface, coat the banks and bottom of the stream, or in any way be toxic or harmful to fish or other aquatic life.

6. Turbidity: No material from other than natural causes shall be added which will cause the turbidity of the water to exceed 10 Jackson turbidity units (JTU).

7. Settleable Solids: No settleable material from other than natural causes shall be added in quantities that will adversely affect salmonid fishes or the natural biota.

8. Color: No material from other than natural causes shall be added which will produce a noticeable change from the natural color or clarity of the water.

9. Floating Materials: Free from floating debris, scum, and other floating materials in amounts sufficient to be unsightly or deleterious.

10. Radioactive Materials: The gross beta concentration shall not exceed 100 picocuries per liter (pc/l). In addition, the concentrations of Radium-226 and Strontium-90 shall not exceed 1 and 2 picocuries per liter, respectively.

11. Toxic Substances: Not to exceed one-tenth of the 96-hour median tolerance limit of salmonid fishes or the natural biota obtained from continuous flow bioassays where the dilution water and toxicant are continuously renewed, except that other, lower application factors may be used in specific cases when justified on the basis of available evidence.

12. Fecal Coliform Bacteria: The fecal coliform bacteria content (either MPN or MF count) shall not exceed a geometric mean of 1,000 per 100 ml, nor exceed 2,000 per 100 ml in more than ten percent of the samples.

13. Plant nutrients: Free from substances attributable to municipal, industrial, agricultural or other sources in concentrations or combinations which will cause or contribute to the growth of aquatic plants or algae in such degree as to create a nuisance, be unsightly or deleterious, or be harmful to salmonid fishes or the natural biota.

14. Mercury (Total): The total mercury concentration shall not exceed 0.005 milligrams per liter (mg/l) at any time or place.

B. Migration Routes

The criteria listed below are for evaluation of the following streams used by salmonid fishes to migrate to and from natural spawning or rearing or imprinting areas. In addition, any criteria that applies to spawning, rearing or imprinting areas will also apply to migration routes unless new numerical limits for said criteria are listed below. In those waters within migration routes where put-and-take trout fishing exists, the requirements of SPC 1R-2 shall apply.

Existing Migration Routes

Trail Creek from Highway 35 downstream to Lake Michigan.
Little Calumet River from Wagner Road Bridge downstream to Lake Michigan via Burns Ditch.

1. Dissolved Oxygen: Concentrations shall average at least 6.0 mg/l during any 24-hour period and shall not be less than 5.0 mg/l at any time. During periods of migration, the dissolved oxygen shall not fall below 6.0 mg/l at any time or any place.

2. Temperature:

a. The normal daily and seasonal temperature fluctuations that existed before the addition of heat due to other than natural causes shall be maintained.

b. The maximum temperature rise at any time or place above natural shall not exceed 2 degrees Fahrenheit. In addition, the temperature shall not exceed 70 degrees Fahrenheit at any time or place during periods of migration nor exceed 85 degrees Fahrenheit at any time.

3. Turbidity: No material from other than natural causes shall be added which will cause the turbidity of the water to exceed 25 Jackson turbidity units.

4. Settleable Solids: Free from substances that will settle to form putrescent or otherwise objectionable deposits.

5. Color: Free from materials producing color or other conditions that will create a nuisance or interfere with the normal migration of salmonid fishes.

NOTE 1: Unless otherwise specified, the term average as used herein means an arithmetical average.

NOTE 2: The analytical procedures used as methods of analyses to determine the chemical, bacteriological, biological and radiological quality of water sampled shall be in accordance with the latest edition of Standard Methods for the Examination of Water and Wastewater or other methods approved by the Indiana Stream Pollution Control Board and the Federal Environmental Protection Agency.